

**Abstract**

An output choke for a D.C. arc welder comprising a high permeability core with an inductance controlling air gap defined by first and second pole pieces terminating in first and second surfaces facing each other and each having two spaced edges with an intermediate area, said surfaces converging from said intermediate area toward each of said edges to generate a specific cross sectional shape for said gap wherein said choke is large enough to carry at least about 100 amperes of weld current.